7.—An archaeological site in the Chichester Range, Western Australia: preliminary account

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Abstract

A rich archaeological site on a re-entrant in the Chichester Range, Western Australia was examined. Some Aboriginal stone artifacts were found in the dry bed of the water course, others on the surface of, and *in situ* within an adjoining alluvial terrace, and others on higher ground above the terrace. The artifactual material, which consists largely of blades and points of the "leilira" type, and its provenance are briefly discussed. Technological and morphological similarities which some of these artifacts have with analogous Levallois forms are noted.

Introduction

In 1967 M. G. Ridpath of the CSIRO Division of Wildlife Research discovered a rich archaeological site on the southern slope of the Chichester Range about 220 km. south of Port Hedland (Figure 1). Ridpath and his wife collected a number of stone artifacts from the surface and sent them with a description of the site and its location to the Western Australian Museum. He later informed J. Bywater and J. Wombey, also of the CSIRO Division of Wildlife Research, of the site's location. In 1970 Bywater and Wombey collected artifacts from this site and found another site on the Cockeraga River on the opposite slope of the Chichester Range 10 km. to the north. They presented collections from both sites to the Western Australian Museum in 1970. In April, 1971, while en route to East Kimberley, the writer, with W. Dix and M. Thompson of the Western Australian Museum, examined the site discovered by Ridpath and briefly visited the one on the Cockeraga River. The following report is based on their findings at the former site.

The stone artifacts collected from both sites at various times are listed in the Western Australian Museum registry as follows:

M. G. Ridpath Collection—A16643.

J. Bywater and J. Wombey Collection—A21966, A21881.

W. Dix, C. Dortch and M. Thompson Collection—B1001-B1003.

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The site and its locality

The site is found on a shallow re-entrant in the hills of the Chichester Range about 6 km. south of the watershed. Its main feature is a *Triodia* covered alluvial terrace on the west bank of the water course. The re-entrant is one of a parallel series of water courses which rise in the Chichester Range and are tributary to the Fortescue River. The river, in this area roughly 15 km. south of the range and running parallel to it, has an underground flow as do the lower reaches of its tributaries. The water course on which the site is located is about 30 m. wide. At the time the site was visited it consisted only of a dry braided bed of sands and gravels, although a large pool was found a few hundred m. downstream.

Artifacts made of black stone are scattered over the surface of the alluvial terrace on the west side of the water course as well as in the stream bed itself. Higher ground on the west side, which may be an older terrace, is also covered with artifacts made of the same stone. Very few artifacts were found on the east side of the water course, which at this point consists of sandy hummocks covered with *Triodia* and small eroded depressions.

Artifacts were found *in situ* in the vertical face of the alluvial terrace on the west side of the water course (Figure 2). The terrace, as seen in section, consists of reddish gritty earth interspersed with imbricated bands of sub-angular and angular fragments of stone and river pebbles. The upper part of the deposit is slightly weathered. The three artifacts found *in situ* were horizontally bedded, and one of them is imbricated with sub-angular fragments of stone (Figure 3). The artifact seen in Figure 3 is drawn in Figure 4A.

From their rolled condition and position within the alluvial deposit, it is apparent that the artifacts found *in situ* are derived. All of the artifacts found on the surface of the terrace as well as in the bottom of the torrent bed are rolled to a greater or lesser degree. The presence of rolled artifacts on the surface of the terrace, others *in situ* within the terrace, and still more lying on the bottom of the stream, suggests that re-sorting of the artifact-bearing gravels has taken place. The presence of the artifacts in the bed of the stream further suggests that the terrace is being seasonally eroded

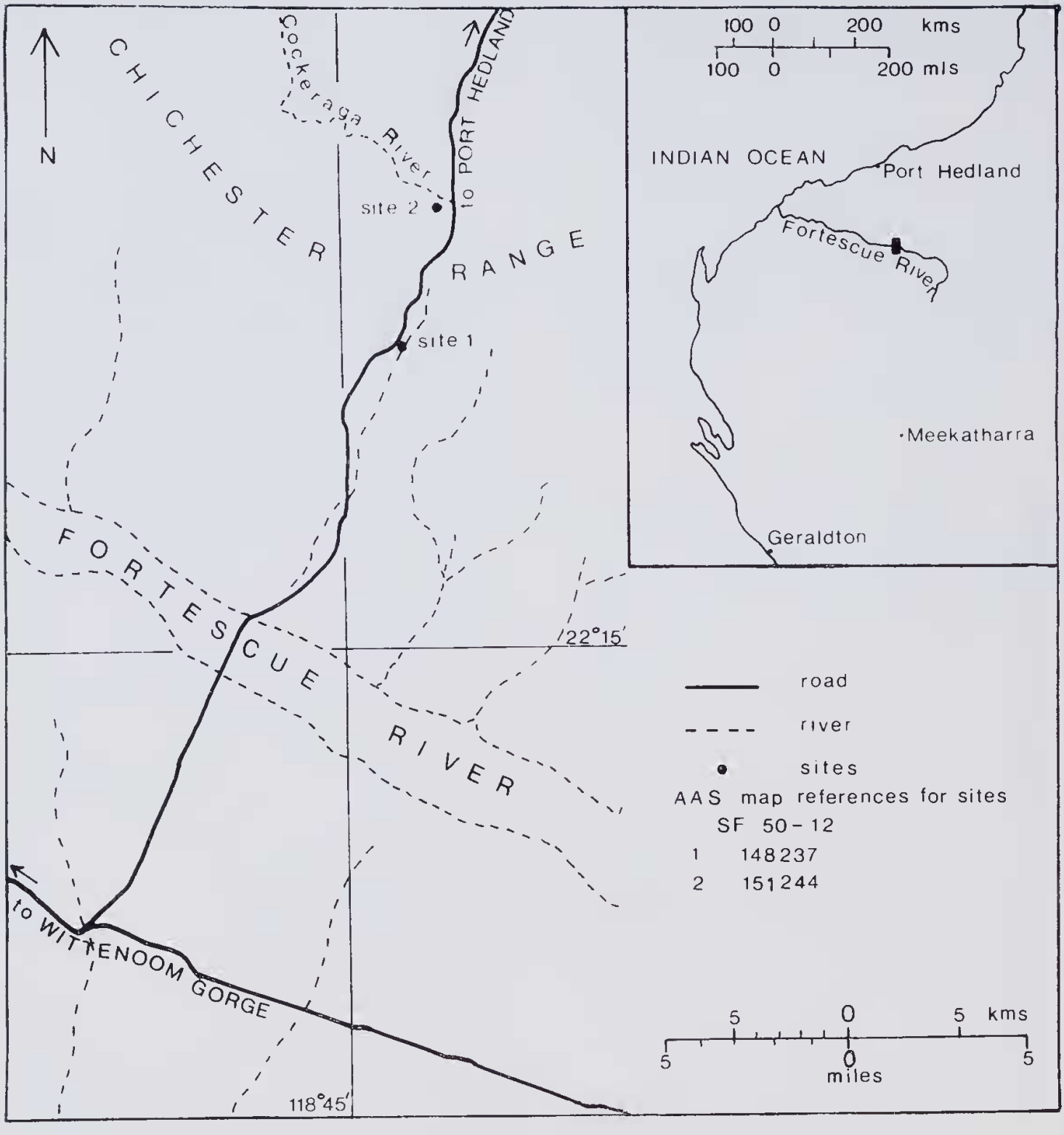


Figure 1.—Sketch map showing location of Chichester Range Sites Nos. 1 and 2.

at present. However, the weathered surface of the terrace as well as its grass cover show that it has been in position for some time.

The terrace extends 20-30 m. back from the present course of the stream. Its full length has not been determined; the part examined extended over 100 m. in length. No excavation of the terrace was carried out, nor was there time available to make a scale drawing of its section.

The artifacts

Nearly all of the artifacts are made of a black sedimentary stone which R. Peers of the Geological Survey of W.A. has identified as an extremely fine-grained cherty siltstone (personal communication 28th July, 1971). Abundant nodules and fragments of this stone were found in the gravels of the terrace and in the bed of the water course. They are even more abundant at the second site on the Cockeraga River, where the stone occurs in a rich outcrop.

The rolling or natural edge damage on the edges of nearly all of the artifacts in this collection is almost indistinguishable from retouch; that is, none is rolled to such an extent that the edge damage has gone past the critical flaking angle at which retouch becomes extremely difficult (Wymer, 1968, p. 14). However, these pieces are considered to be rolled and not heavily utilized or retouched for three reasons. First, nearly all of the artifacts are indiscriminately chipped or damaged along their peripheries and on both faces. This is a feature typical of rolled assemblages. Secondly, the flake scars in question are often of a fresher patination than the rest of the piece, indicating that a considerable period of time elapsed between the manufacture of the artifact and the time its edges were damaged. A third reason is the provenance of the artifacts. Many are located in the gravelly bed of an active water course; three specimens are *in situ* within an alluvial terrace, one of them (Figure 4A) being imbricated with the alluvial gravel (Figure 3). These then must be derived and almost certainly rolled, even though the larger group of artifacts, those which were found lying on the terrace's surface and on higher ground above the terrace, could be the remains of a camp. The rolled condition of the artifacts from the terrace and the higher ground seems to indicate, however, that they are derived like the others. On the other hand, some of the artifacts (e.g. Figure 5B) have been definitely retouched, and it is probable that in many cases retouched or utilized edges have been obliterated or made unrecognizable by rolling.

No attempt is made here to give a quantitative assessment of the artifactual material as none of the three collections at the site is the result of systematic sampling and because the assemblage is derived. The total collection of 453 pieces shows a marked homogeneity because nearly all of the specimens are made of the same kind of stone and because of the large numbers of points and blades of the "leilira" type. Although a detailed typological and technological description will have to wait until more information is available, the following brief outline should give some idea as to the nature of the collection.

Points and blades

Large, finely made pointed blades of the "leilira" type are the dominant tool type among the collection of artifacts made by the three different parties which have visited the site. These implements form a continuum which extends from broad triangular points (Figure 4D), through intermediate forms (Figure 4F), to elongated pointed blades (Figures 4B and 4C). There are also numbers of non-pointed blades (Figure 4E), which, according to traditional classification (e.g. McCarthy, 1967, p. 32), should be included under the "leilira" type. The pointed blades (or "points") have been manufactured by the same form of prepared core technique which has been described by Roth (1904, pp. 16-17) and Spencer and Gillen (1904, pp. 641-648). In brief this is a method of blade or point production in which two or more preparatory blades or flakes are removed in such a way as to cause the projected blade to have more or less convergent edges and in most cases a pointed distal end.

Figure 2.—Alluvial terrace at Site No. 1 showing artifacts *in situ*. The two artifacts are registered B1002 and B1003 in the Western Australian Museum collection.

There are a few blades, including that one found *in situ* within the terrace (Figure 4A), which are made by a different method of prepared core technique from that described above. That is, the shape of the blade is pre-determined by centripetal flaking of the face of the core before it is struck off. Other blades have dorsal faces with bipolar flake scars which show that double-ended cores were being used.

Flakes

Most of these are thick, broad specimens with broad butts and wide angles between the plane of the butt and that of the bulbar face. There are a few flakes with centripetal faceting on their dorsal faces, which shows they were made by the second form of prepared core technique above. An illustrated specimen of one of these (Figure 5A) appears to have been retouched or notched prior to its being rolled. There are also many irregular flakes and fragments of flakes which could result from stone nodules and pebbles being roughly shaped up or tested by the stone workers.

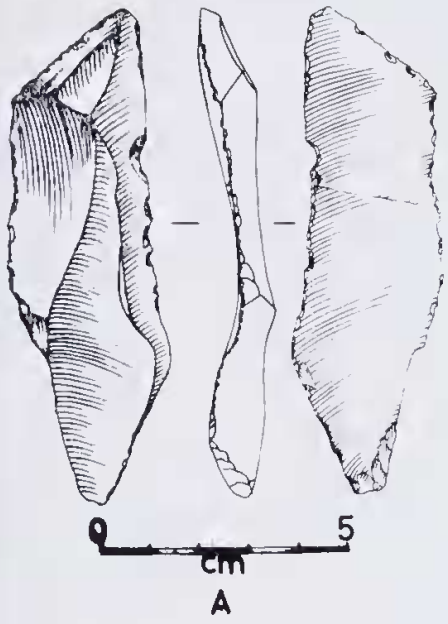
Scrapers and other Tools

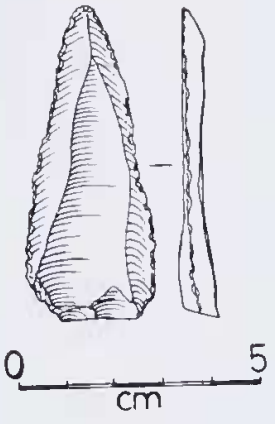
These are not common in this assemblage. Most of the retouched pieces consist of flake scrapers or small irregular adze-like tools. Several denticulated or notched pieces, a burin and an alternately retouched burin-like tool were also found. One of the more interesting pieces is a double-truncated flake which closely resembles the trapeze form of geometric microlith (Figure 5B). Because of its large size, and because it is abruptly retouched only at each extremity and not along one lateral edge as well, it probably should not be considered as a geometric microlith but as a small double-ended scraping or adzing tool. No geometric microliths or backed blades or points have yet been found at the site.

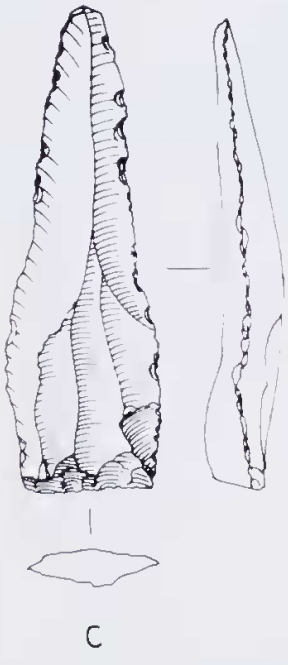
Cores

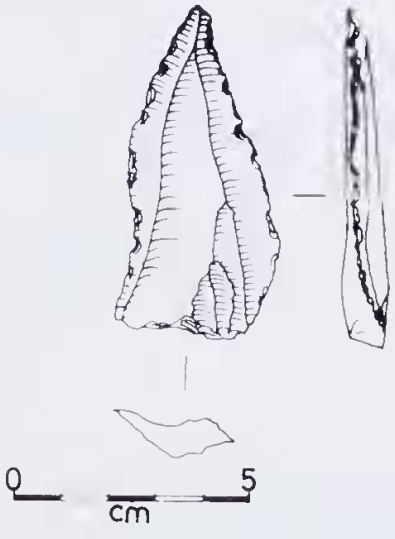
The few cores which have been recovered from the site include those used to obtain pointed blades or points (Figures 5D and 5E). The flake

Figure 3.—Close-up photograph of artifact (B1002) *in situ* within the alluvial deposit and slightly imbricated with sub-angular stones.









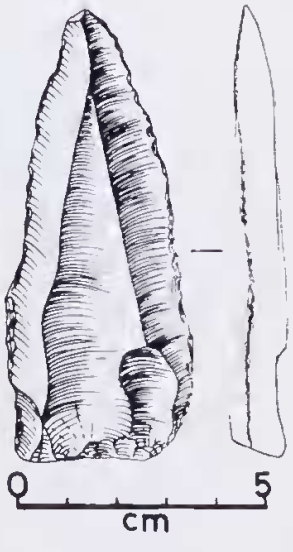


Figure 4.—Blades and points. Figure 4A shows the same artifact shown in close up in Figure 3.

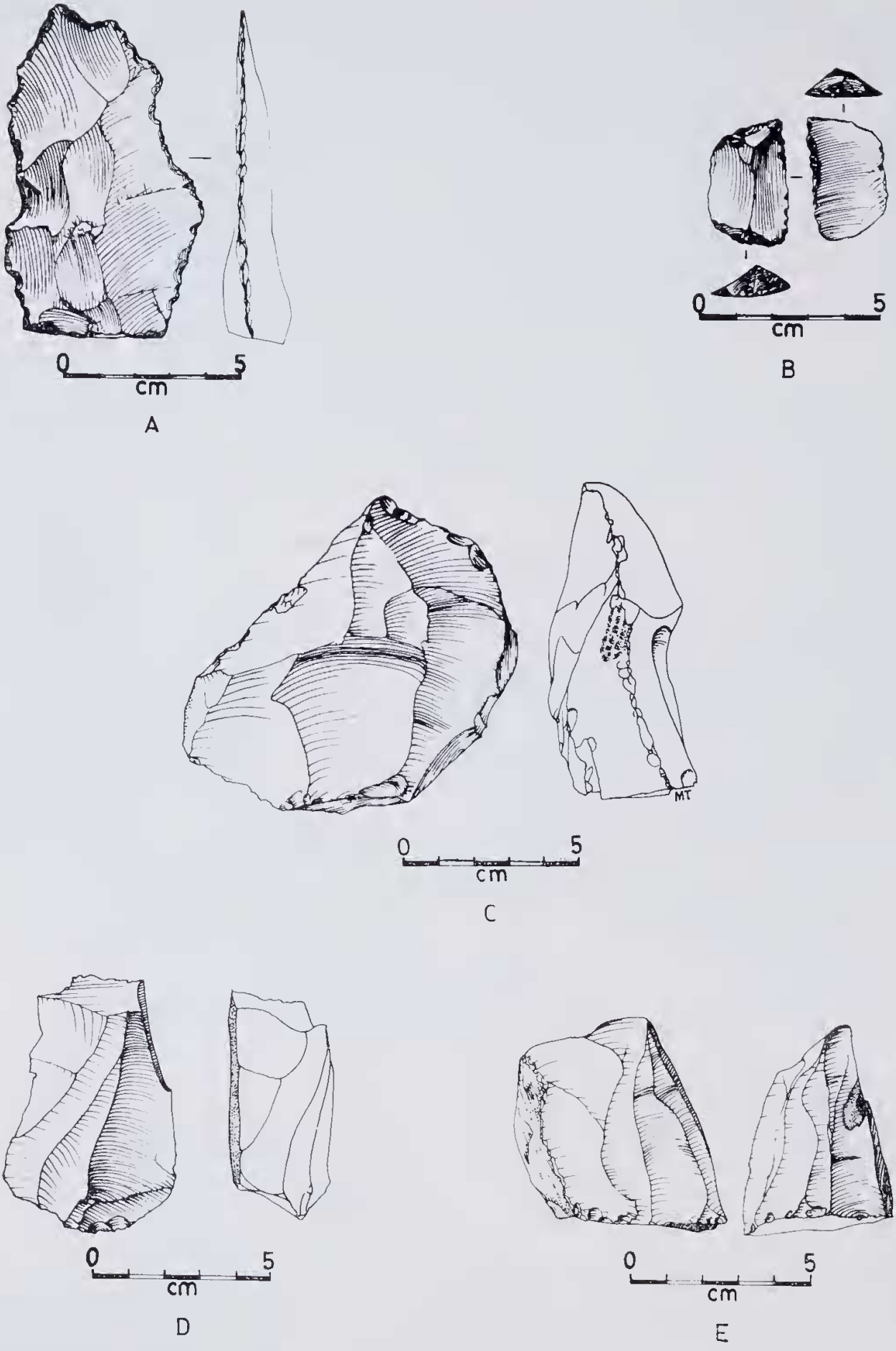


Figure 5.—Flake tools and cores.

cores collected are less typical and some are simply split pebbles from which flakes have been struck at random.

Discussion

The main purpose here is to note similarities which some of the artifactual material from this site have to analogous forms embodying some of the developed Levallois techniques associated with the industries of the Mousterian complex of Europe, Western Asia and North Africa. First, however, it should be pointed out that there are only three or four cores which substantiate the similarities outlined below. Therefore this comparison must remain tentative until a larger selection of cores from this and similar sites can be examined.

The points illustrated in Figures 4D and 4F are identical in appearance to typical Levallois points, while those in Figures 4B and 4C are strikingly similar to elongated Levallois points. The point core in Figure 5D is very similar, both in appearance and technologically, to a typical Levallois point core. These similarities are best seen by comparing the illustrations here to the type illustrations of Levallois points and point cores in Bordes' classic work "Typologie du Paléolithique ancien et moyen."

In addition the blades and flakes made by the second form of prepared core technique mentioned above have strong resemblances to those made on Levallois cores whose flaking faces have been prepared by centripetal or parallel flaking (see Bordes, 1950; 1961).

The forms of the blade and the flake in Figures 4A and 5A have been pre-determined by centripetal flaking before they were removed from the core. Unfortunately there is only a single core so far recovered from the site which can be associated with this second form of prepared core technique. This specimen (Figure 5C) is similar to a mis-struck Levallois flake core. The face of the core has been prepared by sub-parallel flaking while the last flake removed has hinged out

Despite the lack of more definite evidence which a large selection of cores would provide, it should be apparent that there is a strong similarity between the two manufacturing techniques here and some of the Levallois techniques. Knowledge of this occurrence at times seems implicit in the Australian literature (e.g. McCarthy, 1967, p. 17). However, it is felt that these similarities should be more fully recognised in Australia and made clear to students elsewhere.

Further work at the site discussed here and a programme of reconnaissance in the Chichester Range and other parts of the Pilbara region should provide additional data to enable this comparison of these manufacturing processes to be extended. More definite evidence has already been recovered in the Ord Valley in East Kimberley, but the data are not yet available for publication.

Conclusions and recommendations

The finding of artifacts *in situ* within the alluvial terrace and on its surface, on higher ground above the terrace, and in the bed of the water course presents certain problems. For example, one cannot assume that these artifacts have a common origin; they may have been derived from several points upstream at different times. This is one of the reasons why the assemblage is not being dealt with quantitatively here.

Further field work at the site and in the locality should include the following.

1. Stone artifacts from open camp sites on undisturbed ground above the water course should be collected systematically in order to determine the range of artifact types and to gain some idea of their relative frequencies.

2. The length, breadth and thickness of the alluvial terrace should be determined. At least three strips five to ten m. wide each should be laid out at right angles to the water course at points along the terrace where it can be reasonably certain that no collecting has taken place. The strips should each include the higher ground on the west bank, the surface of the terrace and its vertical face, the bed of the water course, and a small part of the east bank. All of the artifacts occurring within each of the strips should be collected and bagged separately according to the features upon or within which they were found. This sampling scheme should provide much more significant data than is presently available.

3. A small pit should be dug at any place along the terrace section where artifacts could be seen *in situ*. The main purposes of this trench would be to determine the feasibility of extended excavation of the terrace and to obtain a radio-carbon sample which could be related to the artifacts within the deposit. Depending upon its breadth and depth the test pit could provide a great deal of information on the composition of the terrace and its relation to the present stream bed.

Future field work should provide more points, flakes and cores associated with the two forms of prepared core technique above. The evident similarities of these manufacturing processes to analogous Levallois techniques are regarded at present as an extremely interesting case of independent invention, and one which invites speculation on the evolution of stone working techniques in general.

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